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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/000,156	10/30/2001	Severine Leveau-Mollier		8241

7590 02/16/2005
General Electric Company
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EXAMINER

LU, TOM Y

ART UNIT PAPER NUMBER

2621

DATE MAILED: 02/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/000,156	Applicant(s) LEVEAU-MOLLIER, SEVERINE	
	Examiner Tom Y Lu	Art Unit 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-72 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 31-72 is/are rejected.
- 7) ☒ Claim(s) 12-30 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 2, 9-10, 31-32 and 36-72 are rejected under 35 U.S.C. 112 2nd paragraph.
 - a. Claim 2 recites the limitation "the control step" in line 1. There is insufficient antecedent basis for this limitation in the claim.
 - b. Claim 9 recites the limitation "the control stage" in line 1. There is insufficient antecedent basis for this limitation in the claim.
 - c. Claim 10 is rejected for the same reason given in Claim 9 above.
 - d. Claim 31 is rejected for the same reason given in Claim 2.
 - e. Claim 32 recites the limitation "the control " in line 4. There is insufficient antecedent basis for this limitation in the claim.
 - f. Claim 36 recites the limitation "the control " in line 13. There is insufficient antecedent basis for this limitation in the claim.
 - g. Claims 37-72 are rejected as being dependent upon Claim 36.
2. Claims 3-6, 12, 32-34 and 69 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
 - a. Referring to Claim 3, the phrase "the pixels of each section being assigned... solely of bad pixels to be found in *the latter* among the line sections where they are most numerous", the examiner does not understand the essence of the claim

language. Please rephrase. Note “control steps” in line 5 of claim 3 appears to be in plural form, which is different from claim 2, consistency is advised.

- b. Claim 4 is rejected for the same reason given in Claim 3.
- c. Claims 5 and 7 are rejected as being dependent upon Claim 3.
- d. Claims 6 and 8 are rejected as being dependent upon Claim 4.
- e. Referring to Claim 32, the examiner does not understand the phrase “the latter value being obtained by increasing the real limiting value”, which seems to be different from Claim 31. Please explain.
- f. Referring to Claim 33, the essence of the claim is not understood, it appears to be a bad translation from a foreign language. The examiner does not understand how it is possible when a sensor is delivering images in dynamic mode having a fixed at the same time; if it is fixed it would not be dynamic. Additionally, the phrase “the separation between two successive images, wherein the processing time needed in the step of determination of the maximum limit of number of bad pixels is determined on the basis of time remaining between the end of an image on output after processing of the bad pixels and arrival of the following image for processing of the bad pixels” is not comprehensible, and the use of long sentence adds the complexity.
- g. Claim 34 is rejected as being dependent upon Claim 33.
- h. With regard to Claim 69, see explanation in Claim 32.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-6, 9-11, 36-41 and 44-46 rejected under 35 U.S.C. 102(e) as being anticipated by Cho (U.S. Patent No. 6,795,118 B1).

- a. Referring to Claim 1, Cho discloses determining the maximum limit of the number of bad pixels in a given area of the image that can be processed (the maximum limit of the number of bad pixels in a given area of the image is defined in Cho as “a threshold value 122”, column 2, line 65, a given area of the image herein is a pixel array of the image, column 2, line 63); defining a window having the format of the area determined (the window in Cho is a pixel array window, column 2, line 63, and the format herein is “array”), establishing a cartography of the pixels forming an image delivered by the sensor which indicates the locations of bad pixels (column 3, lines 38-39, an array of active image pixels are received from sensors 302 for processing, and the array of pixels is the claimed “cartography of the pixels forming an image delivered by the sensor, vertical addressing circuit and horizontal addressing circuit are used to indicate the locations of bad pixels); checking whether a part of the cartography that may contain the window has a set of bad pixels incompatible with the maximum limit

(column 2, lines 62-67, and column 3, lines 1-6, the number of bad pixels are compared with a threshold value 122 to determine whether or not the sensor fails the test); and qualifying or rejecting the sensor depending on the control result.

- b. Referring to Claim 2, Cho discloses wherein the control step comprises moving the window line by line over the entire cartography and, for each position of the window, making a calculation from the number of bad pixels present in the window (column 3, lines 43-48).
- c. Referring to Claim 3, Cho discloses where the processing of bad pixels is intended to be carried out in parallel, each line of pixels on output of the sensor being divided into a number of sections ((column 3, lines 43-46)), the pixels of each section being assigned to a respective parallel processing path, and the set of bad pixels counted in a window on the control steps comprises, for each line of the window, solely of bad pixels to be found in the latter among the line sections where they are most numerous (Cho teaches pixels in the image array are read out in parallel, and compared with a given pixel value to determine whether the pixels are bad pixels, and the number of bad pixels are counted).
- d. With regard to Claim 4, see explanation in Claim 3.
- e. Referring to Claim 5, Cho discloses wherein the set of bad pixels counted comprises the sum of the most numerous pixels in a line section on each of the lines of the window, which sum must not exceed the maximum limit (column 3, lines 20-24).
- f. With regard to Claim 6, see explanation in Claim 5.

- g. Referring to Claim 9, Cho discloses wherein the set of bad pixels counted on the control stage consists of the sum of the bad pixels in the window (column 3, lines 20-23).
- h. With regard to Claim 10, see explanation in Claim 9.
- i. Referring to Claim 11, Cho discloses wherein a sensor is rejected if there should only one location of the window on its cartography for which the set of bad pixels is incompatible with the maximum limit (when an area location of the window consists number of bad pixels more than the maximum limit, the sensor must be rejected since it already exceeds the maximum tolerance threshold value).
- j. Referring to Claim 36, Cho discloses means for loading a cartography of pixels forming an image delivered by the sensor, which indicates the locations of the bad pixels (Cho discloses loading an array of image pixels from an sensor, column 2, line 2); means for loading qualification calculation parameters (the given pixel 110 and tolerance value 116 are the claimed "calculation parameters"), defining a maximum limit in number of bad pixels in a given area of the image that can be processed (threshold value 122 is defined as a maximum limit); means for processing of the bad pixels (blocks 102 and 104 in figure 1 are the claimed "means"); means for providing a window having the format of the given area (a pixel window is provided, column 2, line 63); means for calculation applying the calculation parameters on the cartography in order to determine whether a part of the cartography that may contain the window has a set of bad pixels incompatible with the maximum limit (see figure 1, the bad pixels are determined, and the

number of the bad pixels are compared with threshold value 122 to determine whether the sensor fails the test); and means for qualifying or rejecting the sensor depending on the control (see figure 3, block 304 is the claimed "control").

- k. With regard to Claim 37, see explanation in Claim 2.
- l. With regard to Claim 38, see explanation in Claim 3.
- m. With regard to Claim 39, see explanation in Claim 4.
- n. With regard to Claim 40, see explanation in Claim 5.
- o. With regard to Claim 41, see explanation in Claim 6.
- p. With regard to Claim 44, see explanation in Claim 9.
- q. With regard to Claim 45, see explanation in Claim 10.
- r. With regard to Claim 46, see explanation in Claim 11.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7-8, 35, 42-43 and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cho. The arguments in paragraph 3 above as to the applicability of Cho are incorporated herein.

- a. Referring to Claim 7, Cho does not explicitly teach the number of line section is equal to four, and the bad pixels being processed in parallel on four. However, having the number of line section to be equal to four is merely a matter of obvious

of design choice, which Cho can have any number of line sections, and detecting and counting the bad pixels in the line sections in parallel. Additionally, applicant does not teach having the number of line section equal to four would solve any stated problem nor would post any significant advantages, and it appears that having any number of line section would perform equally well.

- b. With regard to Claim 8, see explanation in Claim 1.
- c. Referring to Claim 35, Cho does not explicitly teach the qualification of sensors is intended for medical radiology. However, the examiner takes official notice that Cho's sensor can be used in the medical field for radiology.
- d. With regard to Claim 42, see explanation in Claim 7.
- e. With regard to Claim 43, see explanation in Claim 8.
- f. With regard to Claim 72, see explanation in Claim 35.

5. Claims 31-34 and 68-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cho as applied to claim 1 above, and further in view of Lawrence (U.S. Patent No. 6,219,443 B1).

- a. Referring to Claim 31, Cho discloses the threshold value 122 is determined. However Cho does not explicitly teach the calculation of the maximum limit, the threshold value 122 in Cho, of number of bad pixels in a given area of the image that can be processed may include a first phase of establishment of a real limiting value and a second stage of obtaining a limiting value used for the control step, the latter value being obtained by reducing the real limiting value. Lawrence teaches comparing the number of bad pixels with average and standard deviation

of the entire display, note the claimed “real limiting value” in the first phase is the size of the display, and then compare the number of bad pixels in an NxN block with average and standard deviation of the NxN block, note the claimed “limiting value” in the second stage is the size of the block, which is smaller than the size of the entire display, and because the NxN block is smaller than the entire display, the limitation of “the latter value being obtained by reducing the real limiting value” is satisfied. At the time the invention was made, a person of ordinary skill in the art would have been motivated to adapt Lawrence’s bad pixel counting technique in Cho because Lawrence’s technique of inspecting the number of bad pixels in a display is an alternative to Cho’s, and Cho at column 3, lines 55-57, teaches other improvements and modifications are welcomed.

- b. With regard to Claim 32, see explanation in Claim 31.
- c. Referring to Claim 33, Cho does not explicitly teach the sensor delivering a series of images to determine the bad pixels, however, it is understood in the art that a sensor can be a standard video camera sensor, which delivering the image at a rate of 30 image per second, which is a fixed separation between two successive images, and Cho teaches the processing is done one image at a time, therefore, the number of bad pixels in one image frame is determined before the next frame starts. With the bad pixel detecting technique taught by Lawrence as taught in Claim 31 above, the values of the average and standard deviation of the image change because of the change in images, and the maximum number of bad pixels

per image will vary accordingly. The motivation for combining Cho and Lawrence is provided in Claim 31.

- d. With regard to Claim 34, the examiner takes official notice the combination of Cho and Lawrence system can provide remaining time greater than or equal to 690 microseconds because the remaining time is dependent upon the speed of the system processor. According to Cho, his system welcomes improvements, it would be obvious to adapt a fast system processor to reduce the processing time, which results an increase in remaining time.
- e. With regard to Claim 68, see explanation in Claim 31.
- f. With regard to Claim 69 see explanation in Claim 68.
- g. With regard to Claim 70, see explanation in Claim 33.
- h. With regard to Claim 71, see explanation in Claim 34.

Allowable Subject Matter

6. Claims 12-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

- a. Claim 12 defines the maximum limit is calculated on the basis of the number of lines of bad pixels in a batch of bad lines comprising a given number of successive lines, each containing a number of bad pixels likely to create a maximum processing time for that line on the means of processing bad pixels or

on one of the parallel processing paths of those means. These features are not taught or suggested by the art of record.

b. Claims 13-30 are dependent upon Claim 12.

7. Claims 47-67 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

a. Claim 47 incorporates allowable features indicated in Claim 12.

b. Claims 48-67 are dependent upon Claim 47.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Heller et al, U.S. Patent No. 6,293,465 B1, see column 8, lines 21-54.

b. Kagle et al, U.S. Patent No. 6,819,358 B1, see column 2, lines 25-41.

c. Perino, U.S. Patent No. 6,593,961 B1, column 5, lines 28-58.

d. Granfors et al, U.S. Patent No. 5,657,400, see column 3.

e. Watanabe et al, U.S. Patent No. 5,854,655, see figure 1.

f. Tan et al, U.S. Patent No. 6,381,357 B1, see column 4, lines 10-30.

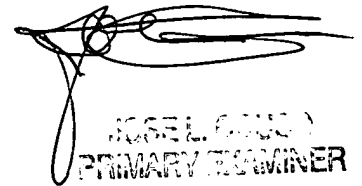
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom Y Lu whose telephone number is (703) 306-4057. The examiner can normally be reached on 8:30AM-5PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H Boudreau can be reached on (703) 305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tom Y. Lu



JOEL G. LU
PRIMARY EXAMINER